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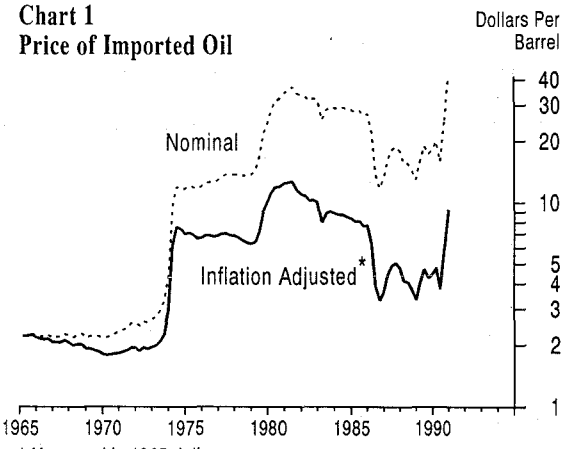
Lessons from the Oil Shocks of the 1970s

The price of oil has shot up dramatically since the beginning of August in an escalation reminiscent of the oil shocks of the 1970s. If the price of oil were to settle around the levels that prevailed in the first half of October, the proportional change would be of the same order of magnitude as the ones in 1978 and in 1986 but smaller than the one in 1973.

The recent oil shock has led many to call upon the Federal Reserve to ease monetary policy to keep an already weak economy from being pushed into recession. This *Letter* reviews evidence from the 1970s to argue that there is no easy way to avoid the economic losses brought on by higher oil prices, and that a moderate policy response that seeks to maintain rather than boost total spending is best for stabilizing output and controlling inflation.

Chart 1 shows the quarterly averages of the price of imported oil with and without an adjustment for inflation since 1965. The value for the fourth quarter of 1990 is an estimate, based on prices that prevailed in the first two weeks of October. In relative terms, the first oil shock in 1973 was much larger than the second in 1978. Also, although the drop in the price of oil in 1986 meant that oil was selling for $4 per barrel in 1965 prices, the recent jump has taken the inflation-adjusted price of oil above the level that prevailed after the first oil shock.

Chart 1
Price of Imported Oil



* Measured in 1965 dollars.

Demand and supply

To understand the effects of an oil shock, it is useful to think of economy-wide output and inflation as determined by the interaction of aggregate demand and supply. Aggregate demand is total spending in the economy by households, businesses, and government. Its determinants include consumer and business expectations of future income and prices, as well as monetary and fiscal policy. Aggregate supply refers to production from all domestic sources, and is determined by factors such as the level of technology, the size and skill level of the labor force, as well as the availability and price of various other resources.

How do demand and supply interact? It is easiest to think of changes in aggregate supply as determining how any change in total spending will be split between output growth and inflation.

Changes in aggregate demand and supply therefore have different effects on real GNP growth and inflation. A decrease in the growth rate of total spending caused by a tightening of monetary policy would lower both real GNP growth and inflation. In contrast, a decrease in aggregate supply would lower real GNP growth but raise inflation. A reduction in the supply of oil, or an increase in its price, implies a reduction in the physical output of the economy and, consequently, lower real growth and higher prices.

For example, the recent jump in the price of oil will lead producers to economize on the use of relatively high priced energy and machines that were built to use cheap oil because they will have become inefficient. Economy-wide

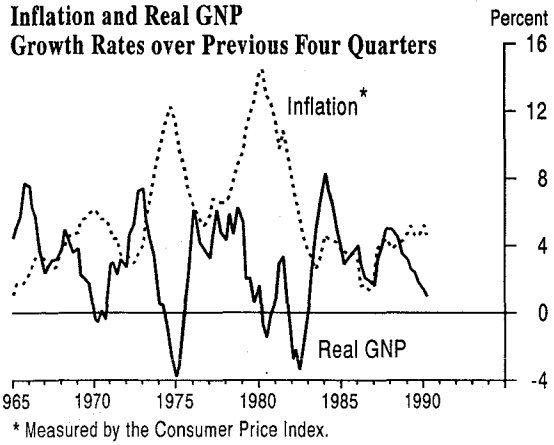
production will drop as a result, and leave fewer total goods to be exchanged for an unchanged amount of spending. The direct result is inflation.

This supply effect is not the only effect of a jump in the price of oil. Since the U.S. must now pay more for imported oil, there will be some reduction in aggregate spending on domestic goods as well. However, as the evidence presented below reveals, the dominant effect of an oil shock appears to be a reduction in aggregate supply.

The first oil shock

The first oil shock in 1973 took place in a setting of already rising inflation. As shown in Chart 2, inflation had begun to increase in the second half of the 1960s. From the fourth quarter of 1968 to the fourth quarter of 1969, for instance, the CPI rose at close to a 6 percent rate. Although the rate of inflation did fall when the economy went into recession in 1970, the Nixon administration judged inflation to be severe enough to impose price controls in August 1971. The measured rate of inflation declined as a result of the controls, but unfortunately, the controls also allowed economic policy to become highly expansionary by hiding the effect of policy on prices. Real GNP surged in response. By the end of 1972, inflation was rising while the dollar was depreciating rapidly. The situation was aggravated by below-normal harvests and crop failures in several parts of the world. Then, in the last quarter of 1973, came the oil embargo and the nearly threefold increase in the price of oil.

Chart 2
Inflation and Real GNP
Growth Rates over Previous Four Quarters



* Measured by the Consumer Price Index.

Two kinds of evidence are available to study how policymakers responded to this shock. First, we can look at the funds rate, since the Federal Reserve's policy goals over this period were usually expressed in terms of a desired range for the funds rate. Second, we can look at scholarly studies from the period and minutes of Federal Open Market Committee (FOMC) meetings. The FOMC is the body within the Federal Reserve that sets monetary policy.

The pattern of movement in the federal funds rate suggests that the Federal Reserve actually eased policy immediately following the oil price shock in the fourth quarter of that year. The federal funds rate rose sharply over the first three quarters of 1973, reflecting the accelerating inflation rate over this period. It then fell more than 100 basis points over the next two quarters. Since inflation was actually rising quite rapidly over this period, the fall in the inflation-adjusted funds was substantial.

This interpretation is supported by several studies of the period. Researchers have generally concluded that the Fed eased policy to overcome the reduction in output caused by the oil embargo. Professor Thomas Mayer of the University of California at Davis points out that the FOMC minutes reveal that several Committee members explicitly argued that the rise in oil prices should be accommodated, and that real money balances should not be allowed to shrink.

However, the FOMC soon reversed this initial response. With the lifting of wage and price controls in April 1974, it became obvious that inflation was out of control. By June, the minutes of the FOMC meetings reveal that the Committee's emphasis had shifted to controlling inflation. The fund's rate rose nearly 250 basis points in the second and third quarters of the year, before falling back. Chart 2 shows that real GNP growth turned negative in the third quarter of 1974. However, a recession was not generally recognized to have been underway. Forecasters, including those at the Board of Governors of the Federal Reserve, underestimated inflation and overestimated real GNP growth over late 1974 and early 1975.

The Fed did ease monetary policy when the severity of the recession became obvious, so that

the funds rate fell below 5½ percent in the second quarter of 1975. Unfortunately, the funds rate generally stayed around that level for the next two to three years, while the inflation rate (as measured by the CPI) generally stayed above. In addition to an easier monetary policy, the U.S. shifted to an expansionary fiscal policy in 1975. The economy boomed in response: the growth rate of real GNP averaged more than 4 percent over the three years ending in 1978. Inflation picked up as well, with the CPI increasing by nearly 7 percent in the four quarters ending in the second quarter of 1978.

The second oil shock

The second oil price shock in 1978 was more drawn out. Prices began to increase from roughly $13 a barrel in late 1978 and rose to above $30 a barrel in mid-1980. The beginning of the Iran-Iraq war in September 1980 had a further effect: oil prices rose above $35 in the first half of 1981, before beginning a protracted decline that culminated in the oil price collapse of 1986.

The second oil shock helped push inflation into the double-digit range. In fact, during the first half of 1980, the year-over-year increase in the CPI averaged more than 14 percent. The Fed's response is well-known: in October 1979, it began to target a reduction in the growth rate of the money supply. The funds rate rose above 15 percent in 1980, fell temporarily, and then rose again to average nearly 18 percent over mid-1981. Real GNP contracted in two not so distinct episodes, first in 1980 and then again in 1982. The upshot was a decline in inflation to a roughly 4 percent rate. Thus, the Fed's ultimate response to the second oil shock was the same as its ultimate response to the first.

It is interesting that the Fed's initial response to the second oil shock also was similar to its response to the first oil shock. Specifically, it seems that policy tended at first to reinforce the inflationary pressures arising from the jump in oil prices. Although the nominal funds rate rose rapidly after the second oil shock, the inflation-adjusted funds rate remained negative prior to the change in the Fed's operating procedures in the fourth quarter of 1979. The rate of increase of the CPI averaged 11.8 percent over the four quarters ending in the third quarter of 1979, while the funds rate averaged 10.9 percent in that quarter.

One interpretation of these developments is that the Fed had turned overly cautious in guarding against another economic downturn after the 1975 recession, and ended up easing policy in the face of rising inflation.

Policy implications

Each time the price of oil shot up in the 1970s, the Fed first followed what can be termed an "accommodative policy," that is, it tried to keep output constant in the face of an adverse supply shock. However, when the extent of the jump in inflation became known, the Fed shifted its policy stance and tried to extinguish this inflation by adopting contractionary policies.

The discussion above suggests that a more moderate course would have been better. Specifically, a policy of keeping the growth rate of total spending unchanged in the face of the oil shock would have provided a more even balance between the Fed's objectives of stabilizing real output growth and keeping inflation in check. Such a policy would imply some decline in output growth and some increase in the inflation rate as prices moved to a new, higher level. While such an outcome is unpleasant, it appears to be the best policymakers can do in response to an oil shock.

To understand why a moderate course is best, it is important to realize that the reduction in aggregate supply is a real loss with some painful consequences that are inescapable. Policymakers cannot reverse the effects of an oil price shock, just as they cannot reverse the effects of an agricultural drought.

Thus, attempts to offset the oil shock by stimulating aggregate demand through monetary or fiscal policy will temporarily raise output, but will probably also lock the economy into a cycle of accelerating inflation. If past experience were any guide, bringing that inflation back to acceptable levels would likely impose further substantial costs on the economy.

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